

## THE INVENTION CLAIMED IS:

1. A telephony testing system comprising:
  - a digital measurement unit (DMU) operative for outputting a subscriber's telephone number, POTS test signals and wideband test control signals;
  - digital communication network (DCN) including a remote terminal (RT);
  - means for converting the subscriber's telephone number to a subscriber's telephone number signal, for outputting the subscriber's telephone number signal to the DCN and for routing the POTS test signals to the DCN; and
  - a digital wideband node (DWN) coupled to the RT, wherein:
    - the DCN conveys the subscriber's telephone number signal, the POTS test signals and the wideband test control signals to the DWN;
    - the DWN routes the subscriber's telephone number signal received via the DCN to the RT whereupon the RT couples a corresponding subscriber's telephone line to the DWN via a test path;
    - the DWN routes POTS test signals received via the DCN to the subscriber's telephone line via the test path; and
    - the DWN converts the wideband test control signals received via the DCN into wideband test signals which are conveyed to the subscriber's telephone line via the test path.
2. The system of claim 1, wherein a response of the subscriber's telephone line to the POTS test signals is conveyed to the DMU via the DWN and the DCN.
3. The system of claim 1, wherein a response of the subscriber's telephone line to the wideband test signals is converted by the DWN into wideband response signals which are conveyed to the DMU via the DCN.
4. The system of claim 1, wherein a response of the subscriber's telephone line to the wideband test signals is conveyed to the DMU via the DWN and the DCN.
5. The system of claim 1, wherein the DWN includes a relay, a modem, a serial communication transceiver and a digital wideband unit (DWU), the relay and the modem coupled to receive the subscriber's telephone number signal, the POTS test signals and the

wideband test signals, the relay operative for forming a path shunting the modem, the transceiver and the DWU whereupon the subscriber's telephone number signal received from the DCN is routed to the RT and the POTS test signals received from the DCN are routed to the subscriber's telephone line, the relay further operative for opening said shunt path and coupling the DWU to the RT whereupon the modem conveys the wideband test control signals to the DWU via the transceiver for conversion thereby into the wideband test signals.

6. The system of claim 5, wherein the DMU includes a modem which modulates the wideband test control signals utilizing a conventional modem protocol, outputs the modulated wideband test control signals to the modem of the DWN via the DCN whereupon the modem of the DWN demodulates the wideband test control signals and conveys the demodulated wideband test control signals to the DWU via the transceiver.

7. The system of claim 5, wherein the DCN includes means for converting electrical signals conveyed on a conductive line into digital signals for transmission on a digital communication line and vice versa.

8. The system of claim 1, wherein the digital communication line is one of a conductive line and a fiber optic line.

9. A telephony testing system comprising:

a digital measurement unit (DMU);

a digital wideband node (DWN); and

a digital communication network (DCN) having a first end communicatively connected to the DMU and a second end communicatively connected to the DWN, the DCN configured to convey electrical signals from said first end to said second end, and vice versa, wherein:

the DCN conveys a subscriber's telephone number signal corresponding to a subscriber's telephone number output by the DMU to the DWN whereupon a subscriber's telephone line corresponding to the subscriber's telephone number signal is connected to the DWN via a test path;

the DCN conveys POTS test signals output by the DMU to the DWN whereupon the POTS test signals are routed to the subscriber's telephone line via the test path; and

the DCN conveys wideband test control signals output by the DMU to the DWN whereupon the wideband test control signals are converted into wideband test signals which are conveyed to the subscriber's telephone line via the test path.

10. The system of claim 9, wherein the response of the subscriber's telephone line to the POTS test signals is conveyed to the DMU via the DWN and the DCN.
11. The system of claim 9, wherein the response of the subscriber's telephone line to the wideband test signals is converted by the DWN into wideband response signals which are conveyed to the DMU via the DCN.
12. The system of claim 9, wherein the response of the subscriber's telephone line to the wideband test signals is conveyed to the DMU via the DWN and the DCN.
13. The system of claim 9, wherein the DWN includes a relay, a modem, a serial communication transceiver and a digital wideband unit (DWU), the relay and the modem coupled to receive the subscriber's telephone number signal, the POTS test signals and the wideband test signals, the relay operative for forming a path shunting the modem, the transceiver and the DWU whereupon the subscriber's telephone number signal received from the DCN is routed to the RT and the POTS test signals received from the DCN are routed to the subscriber's telephone line, the relay further operative for opening said shunt path and coupling the DWU to the RT whereupon the modem conveys the wideband test control signals to the DWU via the transceiver for conversion thereby into the wideband test signals.
14. The system of claim 9, further including means responsive to the subscriber's telephone number signal for connecting the subscriber's telephone line to the DWN via the test path.
15. The system of claim 9, wherein the DCN includes one of a fiber optic line and a conductive line.

16. A method of testing a subscriber's telephone line comprising:
- (a) transmitting a subscriber's telephone number signal, POTS test signals and wideband test control signals to a digital communication network whereupon said signals are converted into digital signal equivalents and then back into corresponding signals;
  - (b) closing a test path to a subscriber's telephone line in response to converting the corresponding subscriber's telephone number signal in step (a);
  - (c) routing the corresponding POTS test signals to the subscriber's telephone line via the test path;
  - (d) converting the corresponding wideband test control signals into wideband test signals; and
  - (e) transmitting the wideband test signals to the subscriber's telephone line via the test path.
17. The method of claim 16, further including:
- (f) transmitting a response of the subscriber's telephone line to the POTS test signals over the digital communication network;
  - (g) converting the response of the subscriber's telephone line to the wideband test signals into wideband response signals;
  - (h) transmitting the wideband response signals over the digital communication network; and
  - (i) processing the responses transmitted in steps (f) and (h) to determine at least one characteristic of the subscriber's telephone line.
18. A telephony testing system comprising:
- a subscriber's telephone line;
  - a remote terminal (RT) coupled to the subscriber's telephone line; and
  - a digital wideband node (DWN) coupled to the RT, wherein the DWN is configured to (1) pass a subscriber's telephone number signal directly to the RT whereupon a test path is formed with the subscriber's telephone line, (2) pass POTS test signals directly to the RT for testing the subscriber's telephone line via the test path and (3) process wideband test control signals into wideband test signals which are conveyed to the RT for wideband testing of the subscriber's telephone line via the test path.

19. The system of claim 18, further including a digital communication network for conveying each signal from a digital measurement unit (DMU) to the DWN and for conveying the response of the subscriber's telephone line to the test signals to the DMU.
20. The system of claim 19, wherein:
- the POTS test signals measure at least one of the following conditions of the subscriber's telephone line:
- AC delta resistance;
  - DC delta resistance;
  - AC voltage;
  - DC voltage;
  - AC current;
  - DC current; and
  - the presence of a load coil;
- and
- the wideband test signals measure at least one of the following conditions of the subscriber's telephone line:
- wideband noise; and
  - the presence of a bridged tap.
21. The system of claim 19, wherein the subscriber's telephone line includes a conductive tip-ring pair having a telephone connected thereto.